

3. External Appearance



25/35kW module



65/80kW module

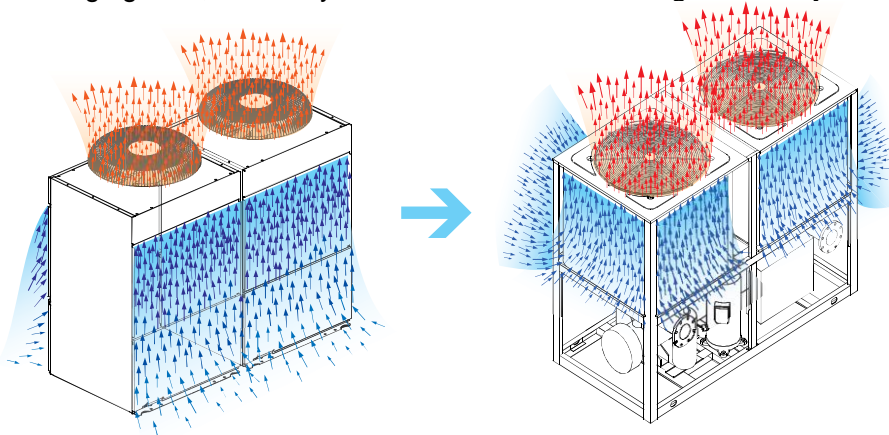


130kW module

4. Features

4.1 New structure design

The module adopts new structure design, H shape condenser, 360° air suction, increased the heat exchanging area, efficiently enhanced the heat exchange efficiency.



4.2 Modular design, flexible combination

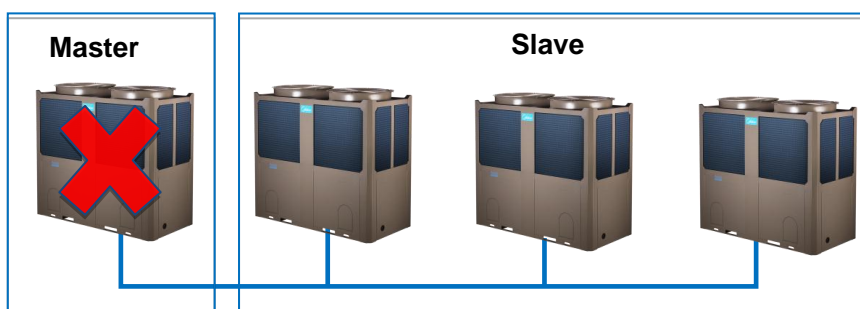
The unit adopts modular design, which can make more units to connect together. The maximum combination of the system consists of 1 main unit and 15 slave units. Cooling (heating) capacity range is from 35kW to 2080kW, meanwhile every separate module can operate as main unit, also each module can be a slave unit with modules combination, more convenient for design and installation.



4.3 Backup functions

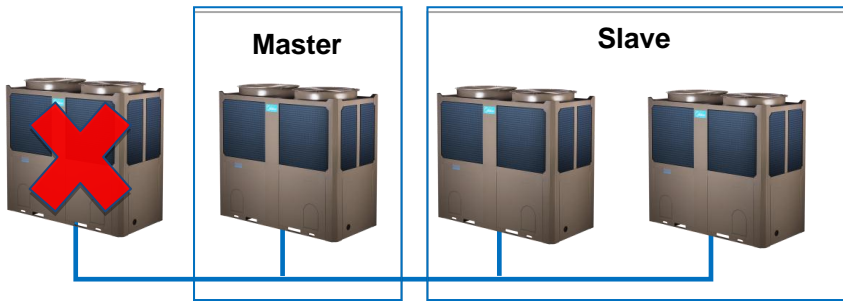
When unit is failed

- If master unit fails, all the units will stop.
- If one slave unit fails, this unit will stop but the others will keep running.
- When the master unit fails, any of the slave one can be set as the master unit by manual setting.



When unit is under protection

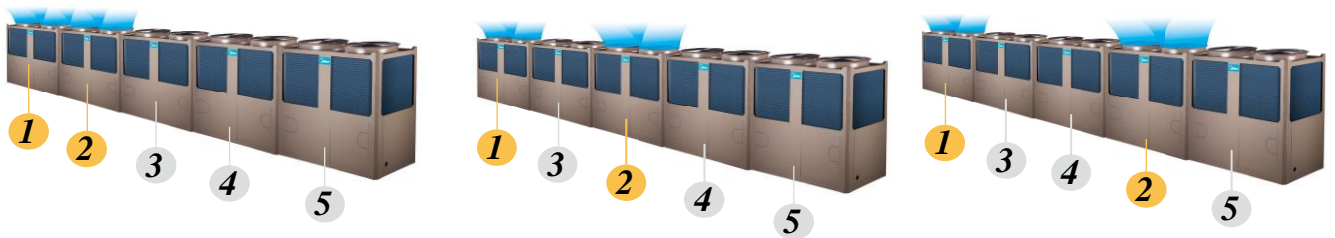
- If master unit’s protection happens, this unit will stop but the others will keep running.
- If slave unit’s protection happens, this unit will stop but the others will keep running.
- (Except PE, P9 protection happens)
 PE: Low temperature protection of evaporator.
 P9: Outlet and inlet water temperature difference protection.



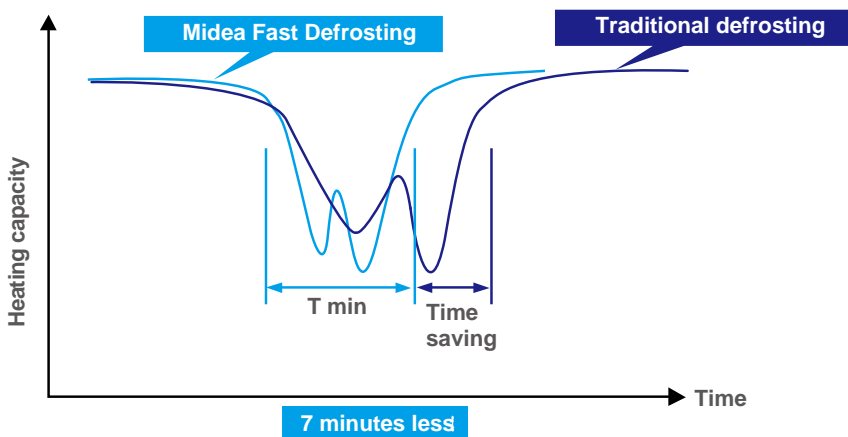
4.4 Alternative cycle duty operation

In one combination, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.

(For example, five modules combination, no.1 is master unit, others are slave units.)



4.5 Intelligent defrosting technology

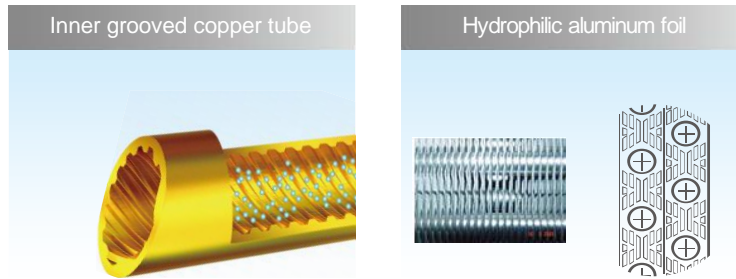


Model alternate defrosting, small fluctuation for water temperature

Manual defrosting program for service purpose (10S Pressing the check button)

4.6 High efficiency heat exchange technology

The chiller adopts inner grooved copper tube and hydrophilic aluminum foil, greatly improve the heat exchange efficiency.

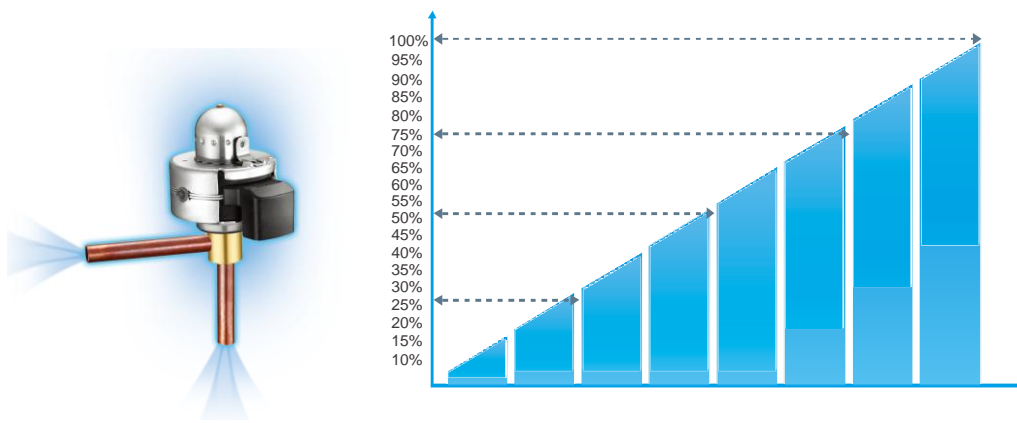


4.7 EXV more precisely flow control

Patented liquid distribution components to maximize performance and minimize defrost impact.

500 steps EXV plus capillary for stable and accurate gas flow control.

Fast respond resulting in higher efficiency and improved reliability.



4.8 Reliable protections

Many kinds of protection are adopted to make sure the safe running for chiller.



High/low pressure protection of compressor



Power phases sequence protection



Evaporator low temperature protection in cooling



System anti-freezing protection in winter



Frequently ON/OFF protection of compressor



Over-current protection of compressor



Air discharge temperature protection of compressor



System high temperature protection



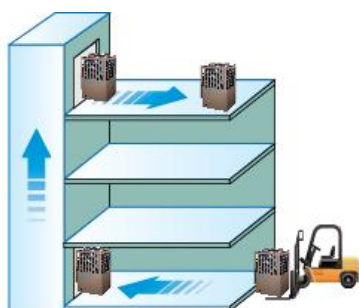
Water flow protection



Sensor malfunction protection

4.9 Easy transportation and installation

Air cooled scroll chiller structure is compact, light weight, easy transportation and installation, no need cooling water tower, significant cost-savings.



Easy to transport

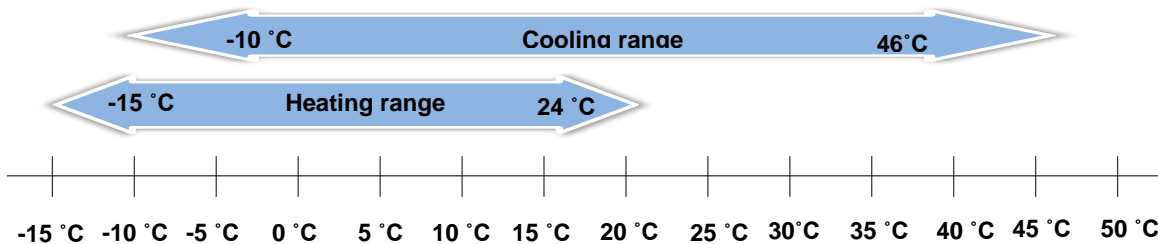


No need water cooling tower

4.10 Applicable temperature range

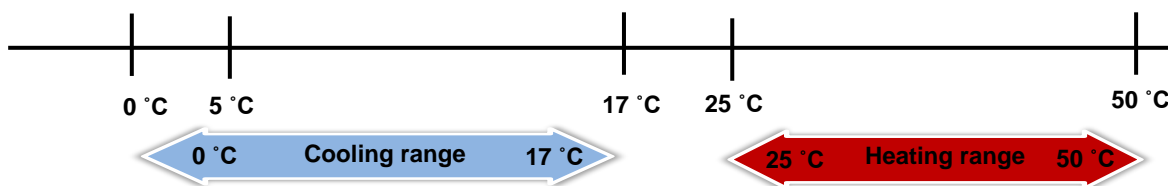
Mode	Ambient temperature range	Water outlet temperature range
Cooling	-10°C ~46°C	0°C ~17°C (7°C is default, less than 5 °C must add the antifreeze, SS series.)
		5°C ~17°C (SP series)
Heating	-15°C ~24°C	25°C ~50°C (45°C is default)

Ambient temp. range



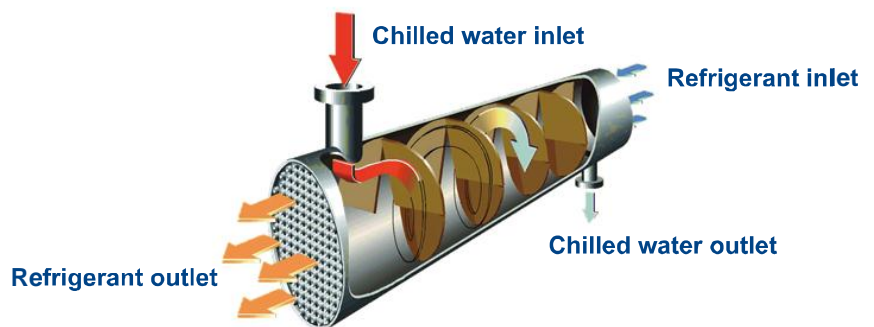
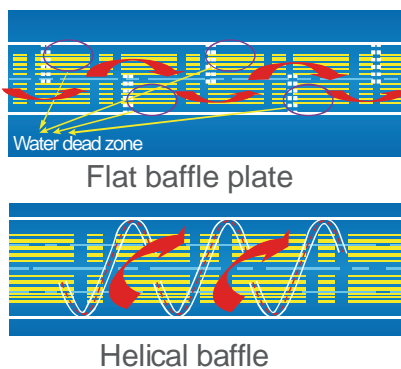
Chilled outlet water temperature can be adjusted by wired controller according to customer's demand.

Water outlet temp. range



SS series

4.11 Double pipe&shell and tube heat exchanger

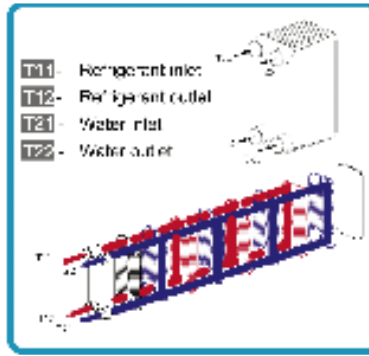


For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

SP series

4.12 Plate heat exchanger

By adopting high efficiency plate heat exchanger, the energy consumption can be reduced.



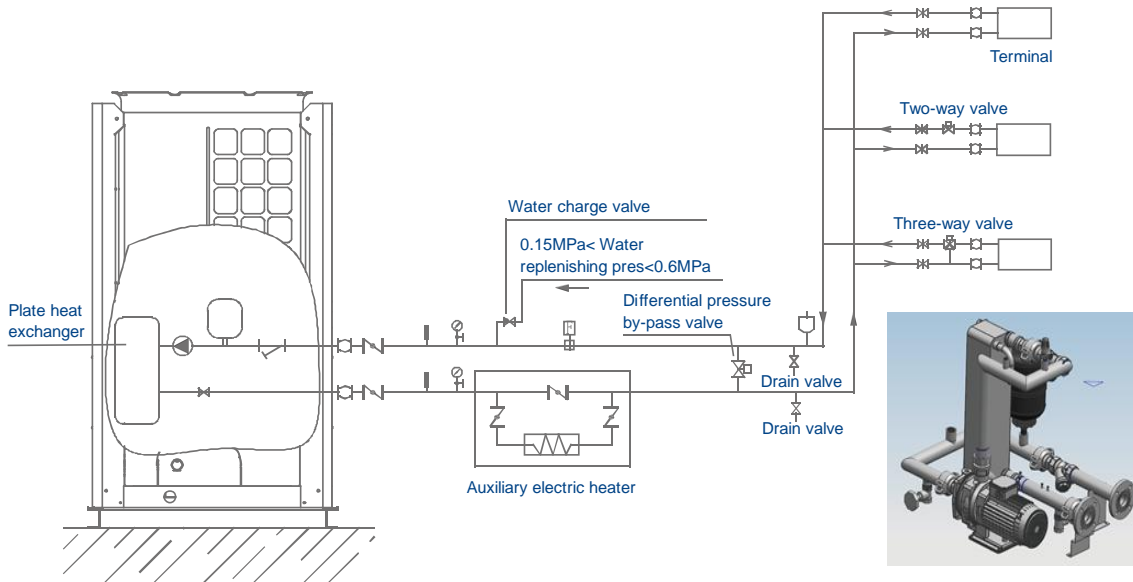
Built-in with voltage protection, current protection, anti-freezing protection, water flow protection and etc., effectively guarantee the system to work safety.

Metallic protective cabinet with rustproof polyester paint.

4.13 Built-in hydraulic module

The modules are fully integrated and built-in hydraulic module, such as expansion tank, plate heat exchanger, water circulating pump, etc. It saves installation space and cost.

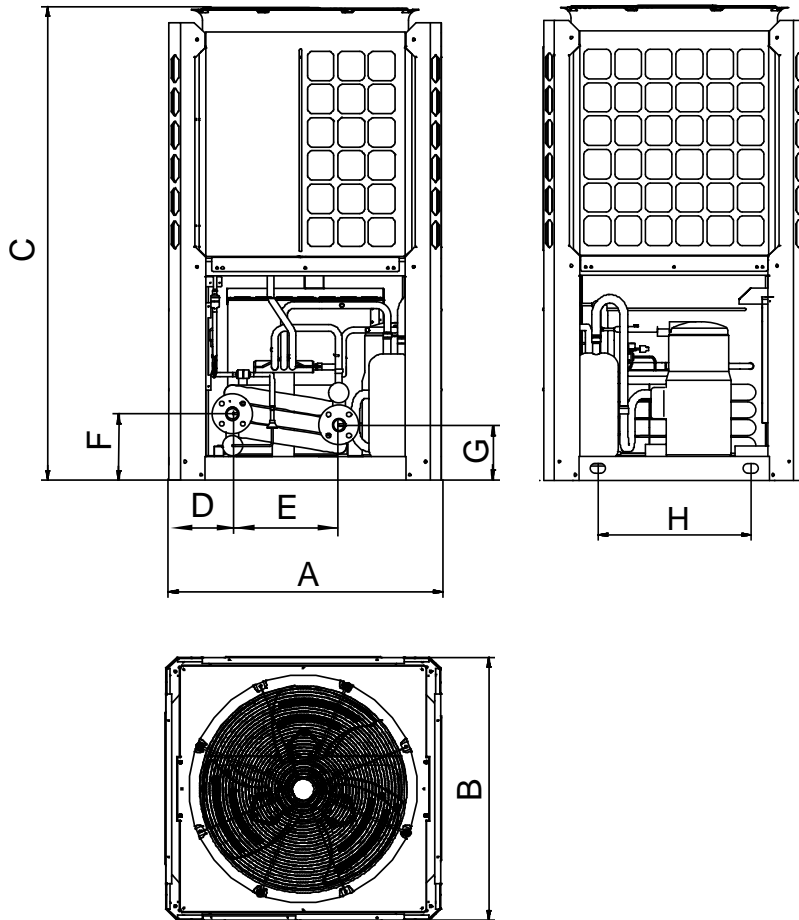
(Available for MC-SP25M-RN1L &MC-SP35M-RN1L)



Stop valve	Pressure gauge	Water flow switch	Gate valve	Differential pressure by-pass valve
Y-shaped filter	Thermometer	Circulating pump	Check valve	Automatic discharge valve
Expansion vessel	Safety valve	Flexible joint		

6. Dimensions

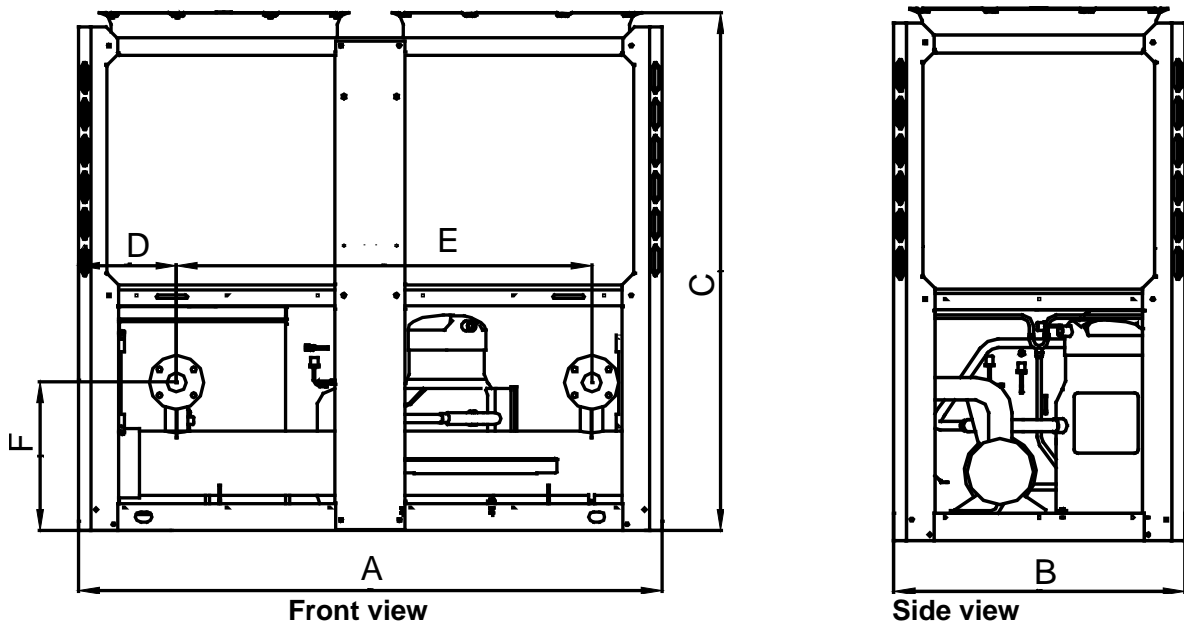
25/35kW module



Unit: mm

Model	A	B	C	D	E	F	G	H
MC-SS25/RN1L MC-SP25M-RN1L MC-SS35/RN1L MC-SP35-RN1L MC-SP35M-RN1L	1020	980	1770	237	400	250	210	570

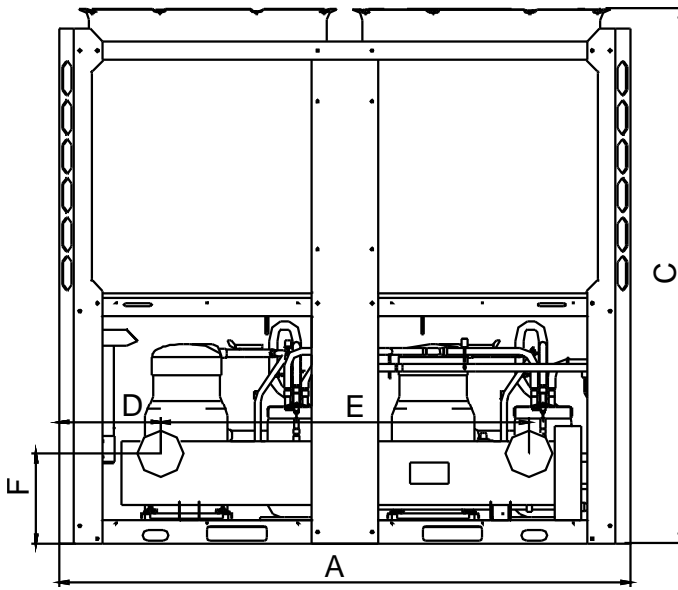
65/80kW module



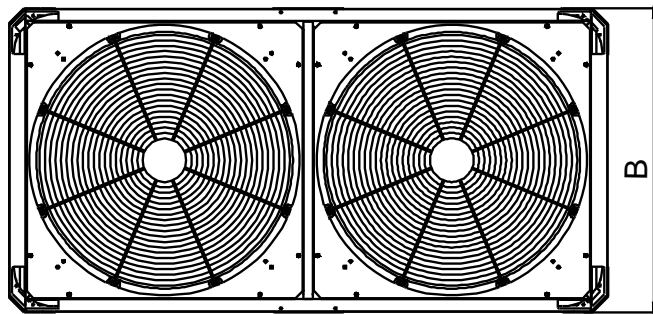
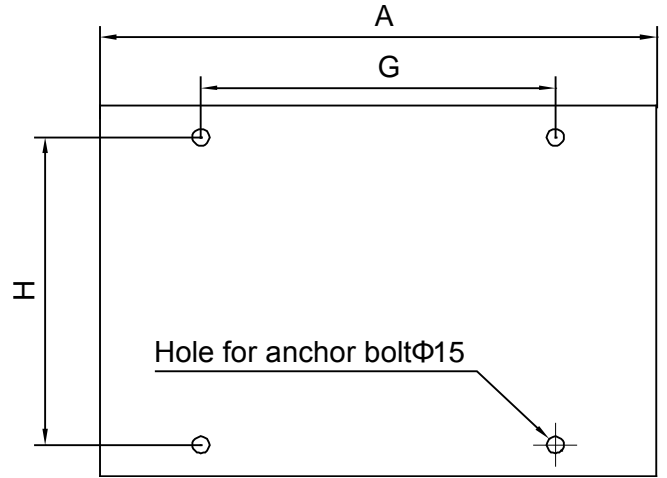
Unit: mm

Model	A	B	C	D	E	F	G	H
MC-SS65/RN1L MC-SP65M-RN1L MC-SS80/RN1L	2000	960	1770	336	1420	506	1460	862

130kW module



Front view



Top view

Unit: mm

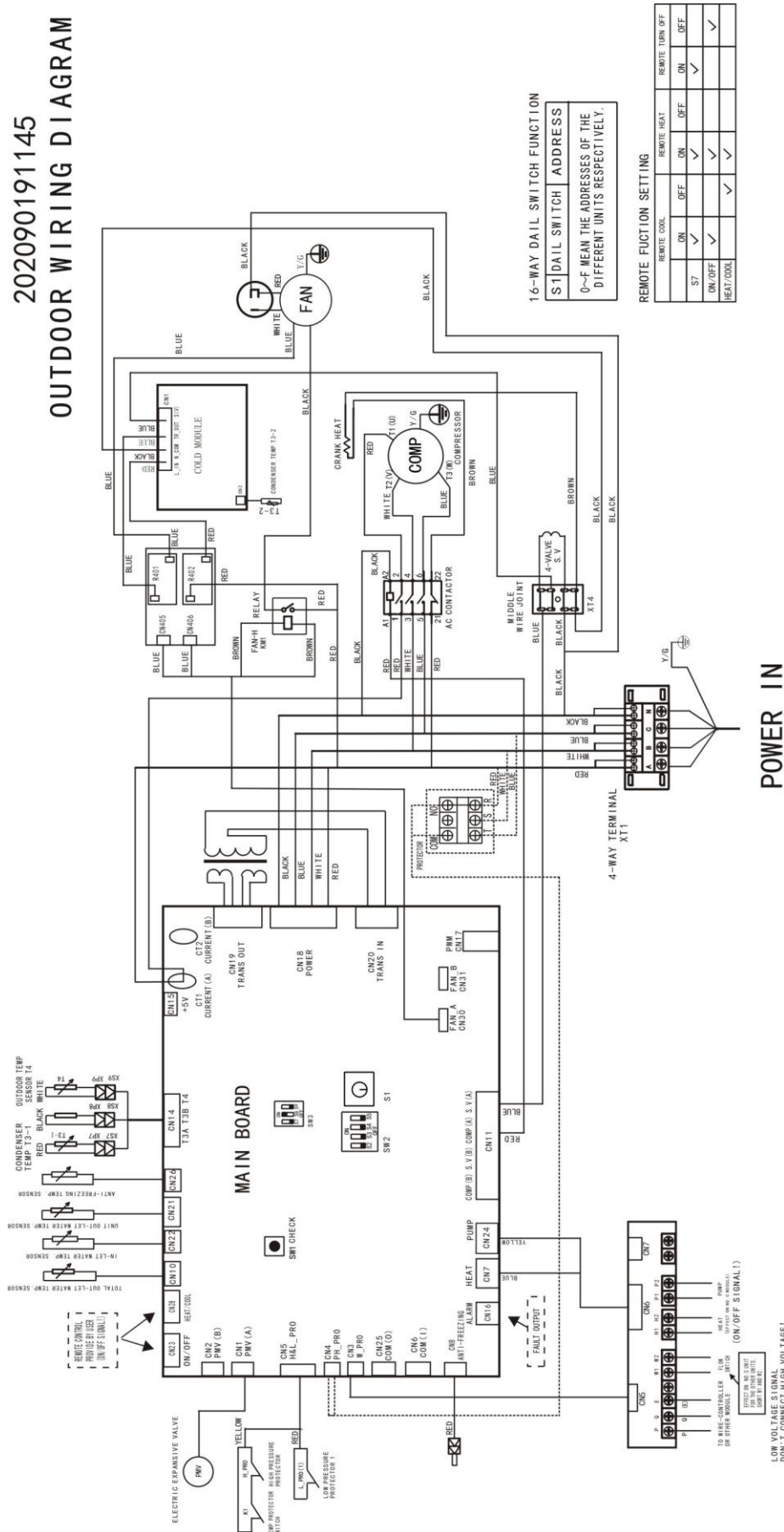
Model	A	B	C	D	E	F	G	H
MC-SS130/RN1 MC-SS130/RN1L	2200	1120	2060	390	1420	347	1460	1017

8. Wiring Diagrams

8.1 Wiring Diagrams SS series

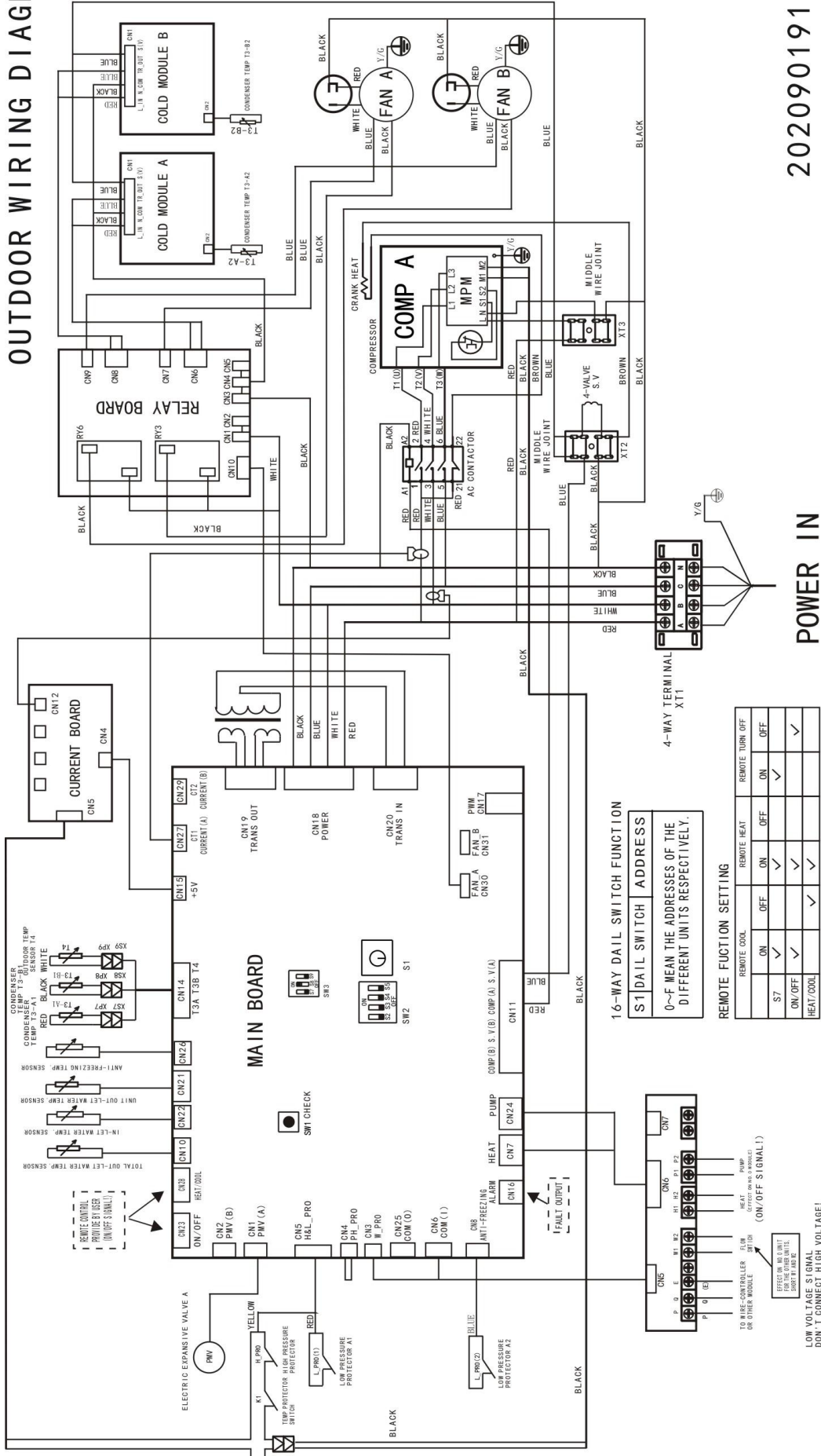
MC-SS35/RN1L

202090191145
OUTDOOR WIRING DIAGRAM



MC-SS65/RN1L

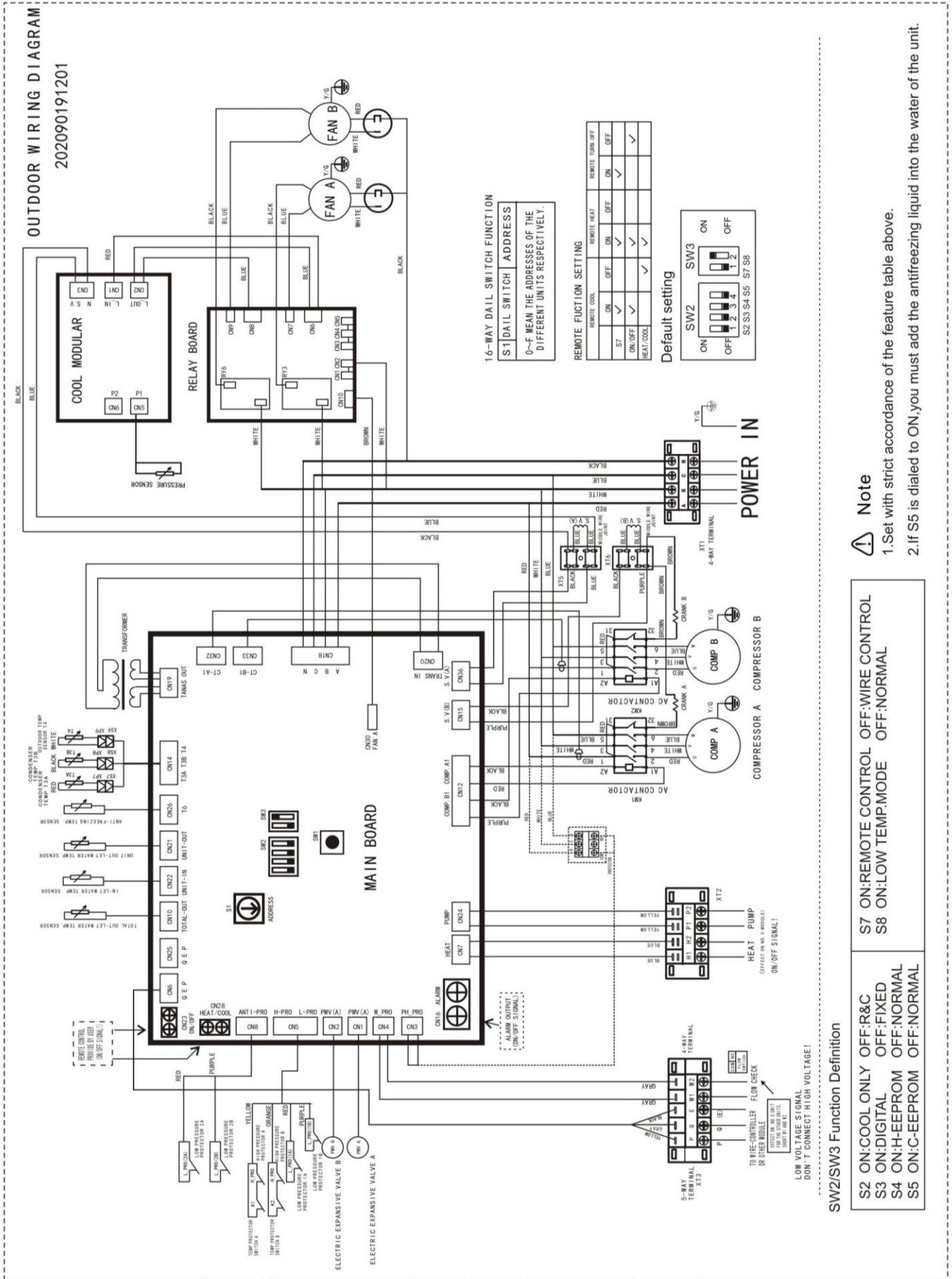
OUTDOOR WIRING DIAGRAM



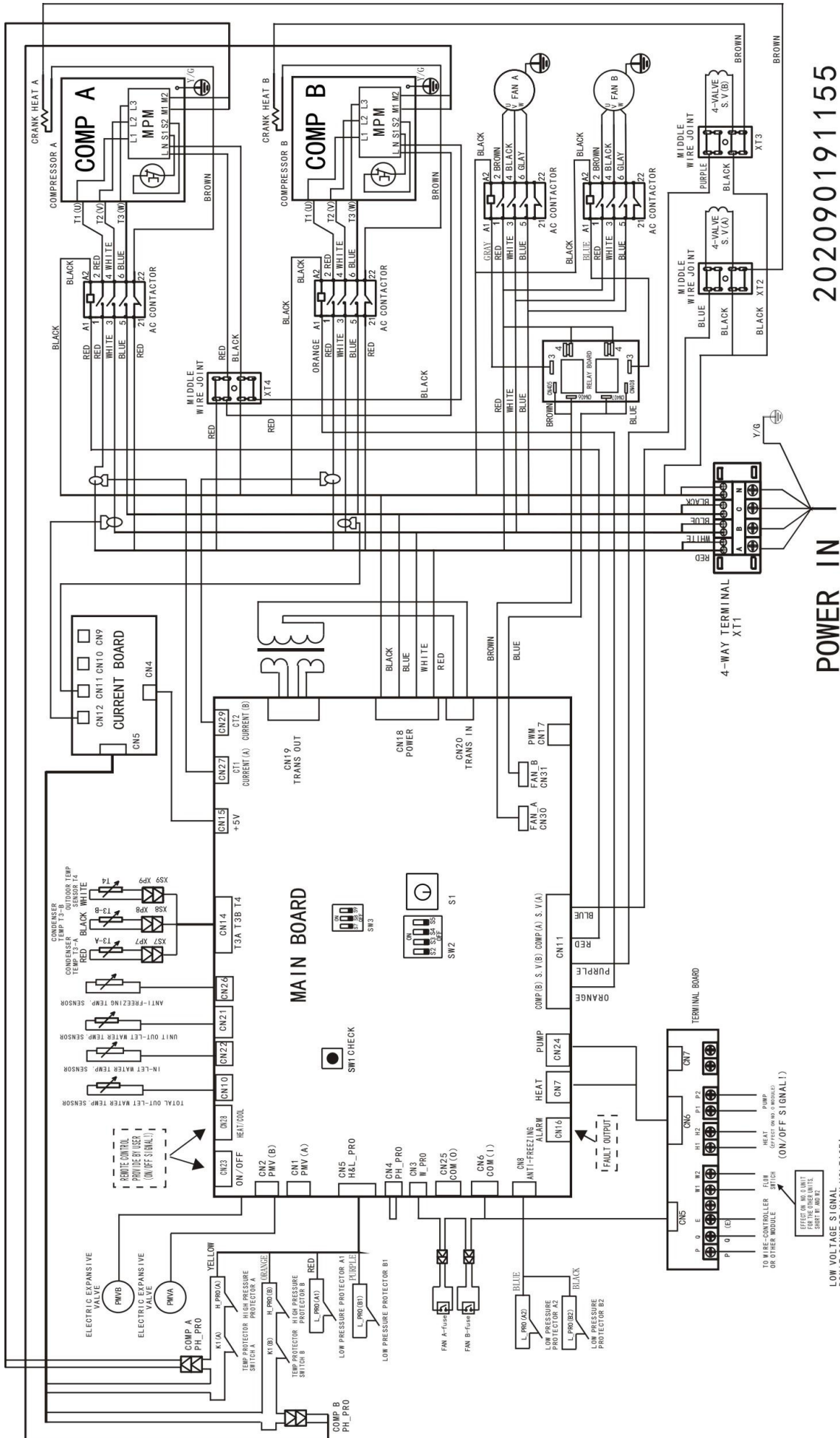
202090191150

POWER IN

MC-SS80/RN1L



MC-SS130/RN1



202090191155

POWER IN

LOW VOLTAGE SIGNAL
DON'T CONNECT HIGH VOLTAGE!

TO WIRE CONTROLLED PUMP, HEAT, OR OTHER MODULE OR OTHER MODULE (ON/OFF SIGNAL)

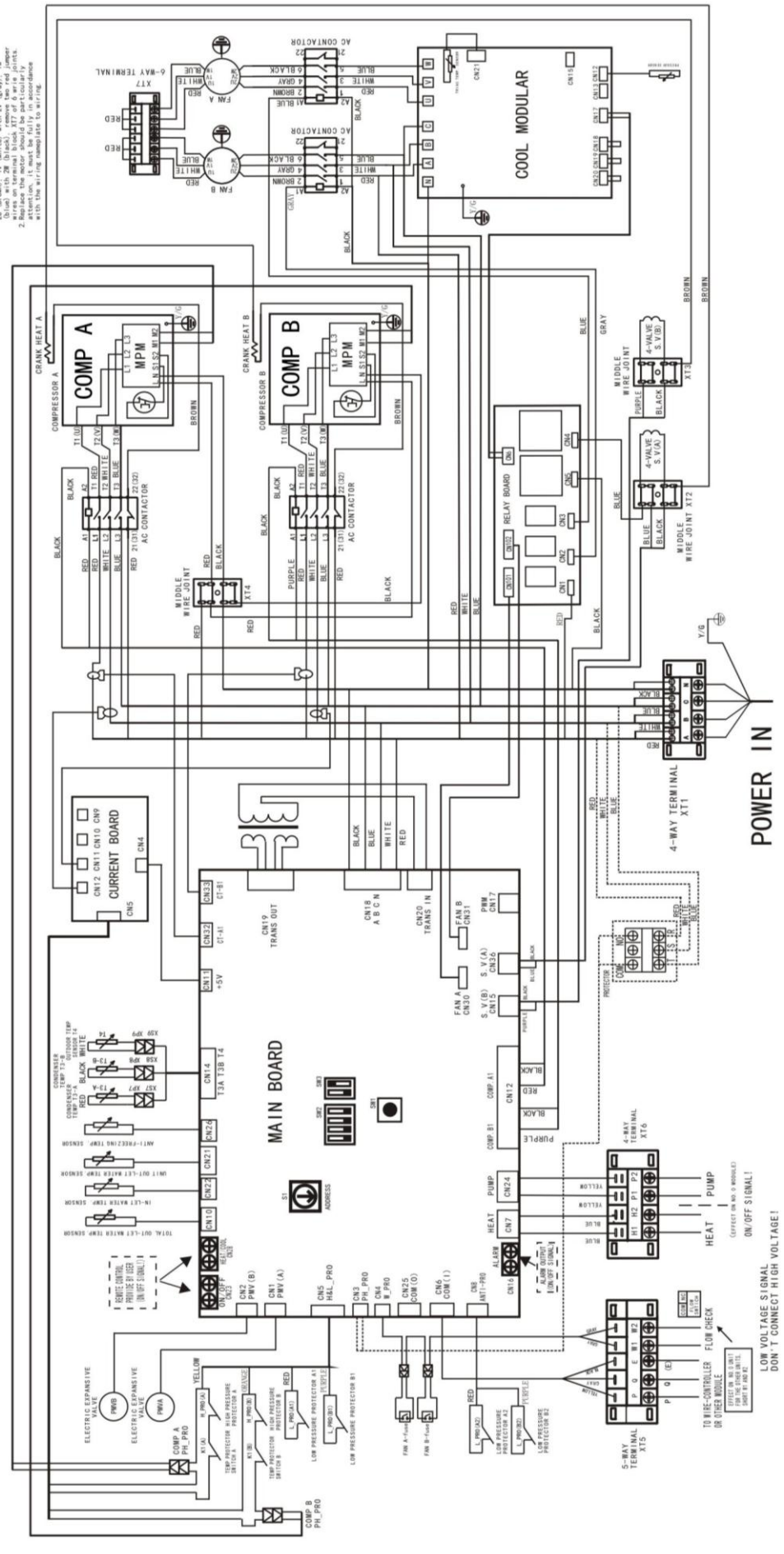
TO WIRE CONTROLLED PUMP, HEAT, OR OTHER MODULE (ON/OFF SIGNAL)

TO WIRE CONTROLLED PUMP, HEAT, OR OTHER MODULE (ON/OFF SIGNAL)

MC-SS130/RN1L

202090191205

Note:
 1. The wind speed of fan has two levels. The fan speed can be adjusted by the fan speed controller. If necessary, it can be converted into low speed. Low air speed means the fan speed is 20 (brown), the fan speed is 29 (gray), the fan speed is 38 (blue), the fan speed is 47 (red). The fan speed controller is located on the fan speed controller terminal block X17 of 6 wire joints. Attention, it must be fully in accordance with the wiring template to wiring.



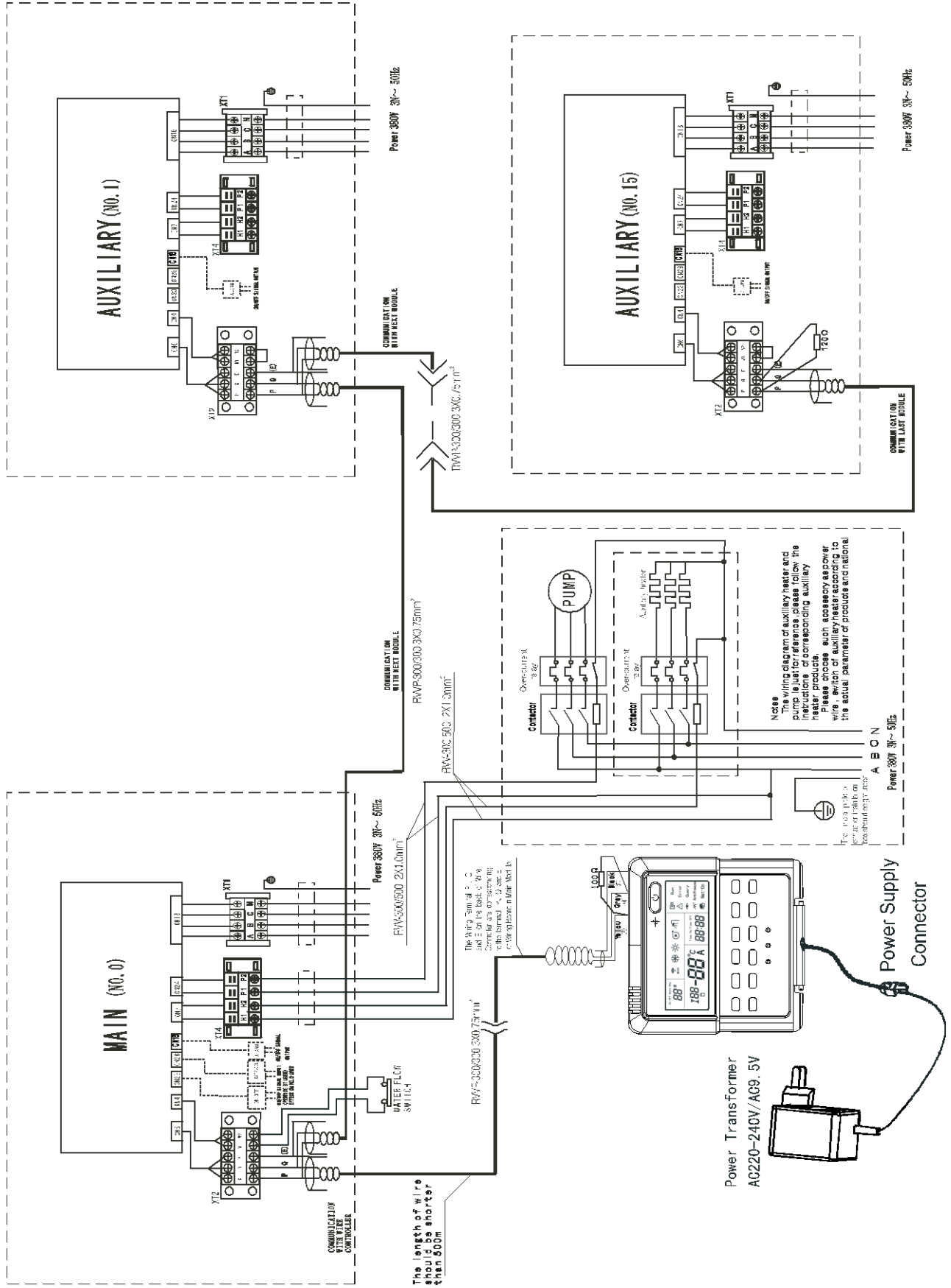
POWER IN

LOW VOLTAGE SIGNAL
 DON'T CONNECT HIGH VOLTAGE!

8.2 Networking Communication Schematic SS series

MC-SS35/RN1L/ MC-SS65/RN1L/ MC-SS80/RN1L /MC-SS130/RN1/ MC-SS130/RN1L

Attached picture (I) Networking Communication Schematic of Main Unit and Auxiliary Unit

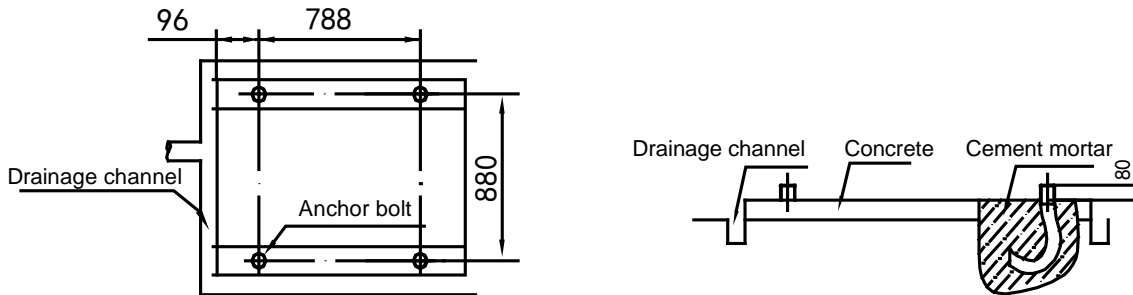


13.1.3 Installation foundation

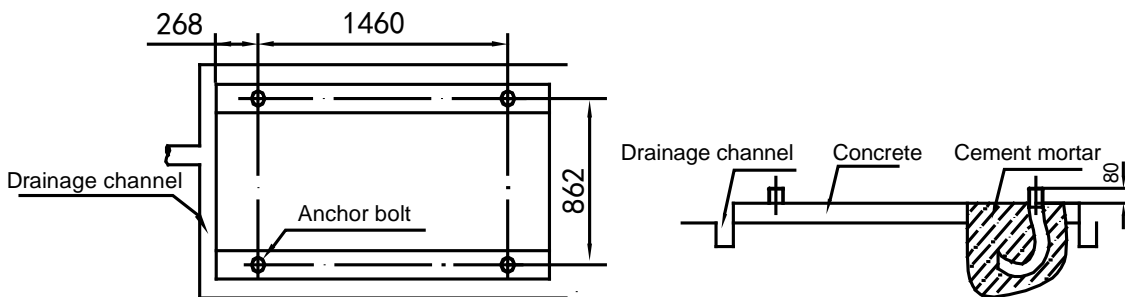
- The unit should be located on the horizontal foundation, the ground floor or the roof which can bear operating weight of the unit and the weight of maintenance personnel. Refer to the operating weight parameters in specification table.
- If the unit is located so high that it is inconvenient for maintenance personnel to conduct maintenance, the suitable scaffold can be provided around the unit.
- The scaffold must be able to bear the weight of maintenance personnel and maintenance facilities.
- The bottom frame of the unit is not allowed to be embedded into the concrete of installation foundation.

Location drawing of installation foundation of the unit (unit: mm)

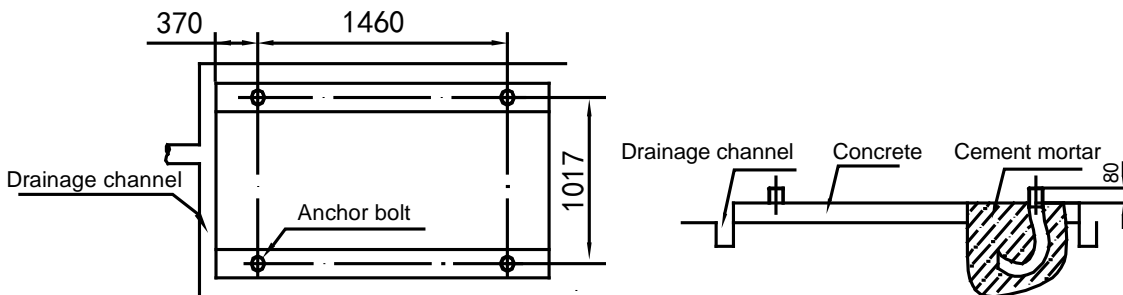
25/35kW module



65/80kW module



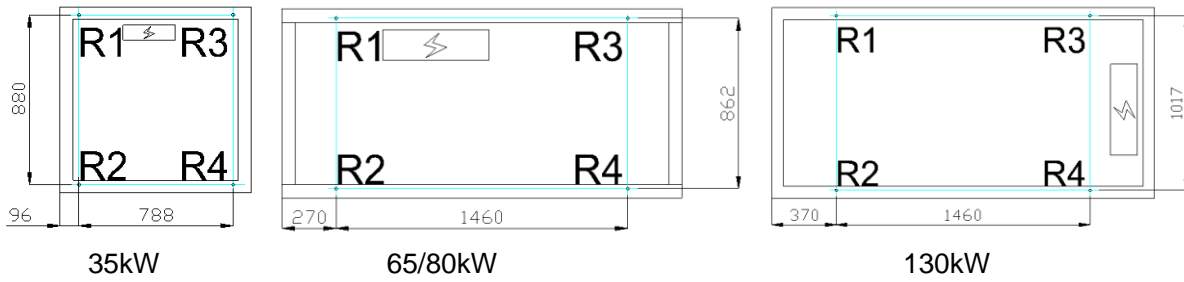
130kW module



Load distribution

Unit: kg

Series	Model	R1	R2	R3	R4	R5	R6
SS	MC-SS35/RN1L	81	81	89	89	/	/
	MC-SS65/RN1L	140	130	170	150	/	/
	MC-SS80/RN1L	170	210	170	160	/	/
	MC-SS130/RN1	200	320	230	370	/	/
	MC-SS130/RN1L	200	320	230	370	/	/
SP	MC-SP25-RN1L	62	70	67	75	/	/
	MC-SP25M-RN1L	76	82	78	87	/	/
	MC-SP35-RN1L	74	78	78	84	/	/
	MC-SP35M-RN1L	83	90	85	95	/	/
	MC-SP65-RN1	130	160	130	140	/	/



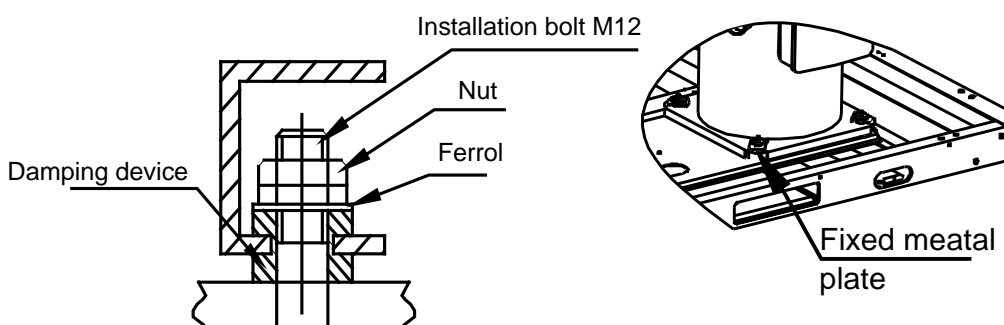
13.1.4 Installation of damping devices

※ Damping devices must be provided between the unit and its foundation.

By means of the $\Phi 15\text{mm}$ diameter installation holes on the steel frame of the unit base, the unit can be fastened on the foundation through the spring damper. See figure above (Schematic diagram of installation dimension of the unit) for details about center distance of the installation holes. The damper does not go with the unit, and the user can select the damper according to the relevant requirements. When the unit is installed on the high roof or the area sensitive to vibration, please consult the relevant persons before selecting the damper.

※ Installation steps of the damper

Step	Content
1	Make sure that the flatness of the concrete foundation is within $\pm 3\text{mm}$, and then place the unit on the cushion block.
2	Raise the unit to the height suitable for installation of the damping device. Remove the clamp nuts of the damper.
3	Place the unit on the damper, and align the fixing bolt holes of the damper with the fixing holes on the unit base.
4	Return the clamp nuts of the damper to the fixing holes on the unit base, and tighten them into the damper.
5	Adjust the operational height of the damper base, and screw down the leveling bolts. Tighten the bolts by one circle to ensure equal height adjustment variance of the damper.
6	The lock bolts can be tightened after the correct operational height is reached.



13.2 Water System Installation

Notice:

- After the unit is in place, chilled water pipes can be laid.
- The relevant installation regulations should be abided with when conducting connection of water pipes.
- The pipelines should be free of any impurity, and all chilled water pipes must conform to local rules and regulations of pipeline engineering.

13.2.1 Connection requirements of chilled water pipes